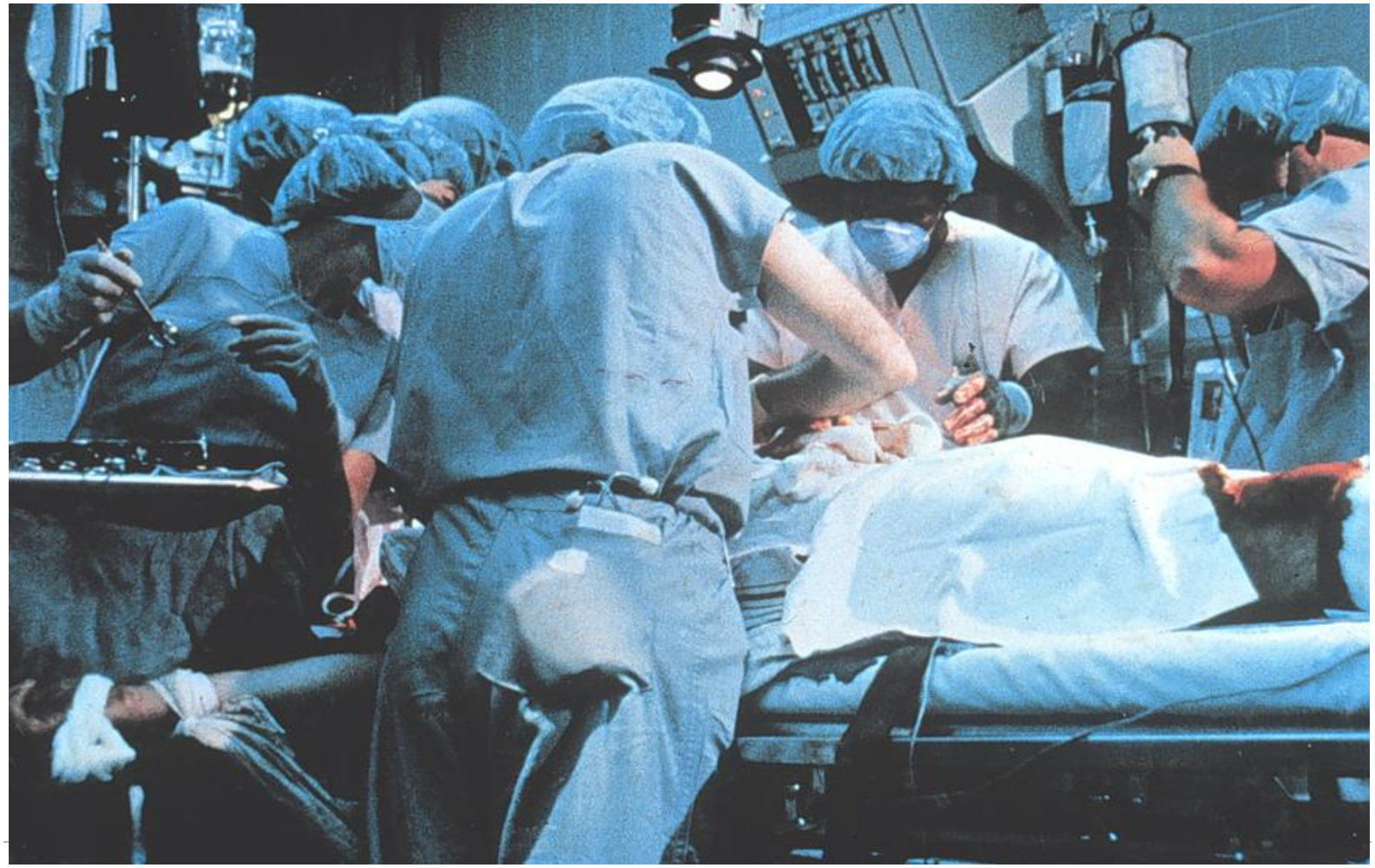
TRAUMA CARE IN ALASKA-2011

Frank Sacco MD, FACS
Chair, Trauma System Review Committee



GOALS

- The scope of the problem.
- How best to care for seriously injured patients
- How we care for them now in Alaska
- How we can do better- examples
- Recommendations

Trauma in Alaska

The leading cause of death under age 44.

- Alaska- second highest trauma mortality in the US
- 400-500 alaskans die each year.
- ~ 5000 hospital admissions.
- Over 1000 with permanent disabilty.

All Cause Mortality Alaska

10 Leading Causes of Death, Alaska
2005, All Races, Both Sexes

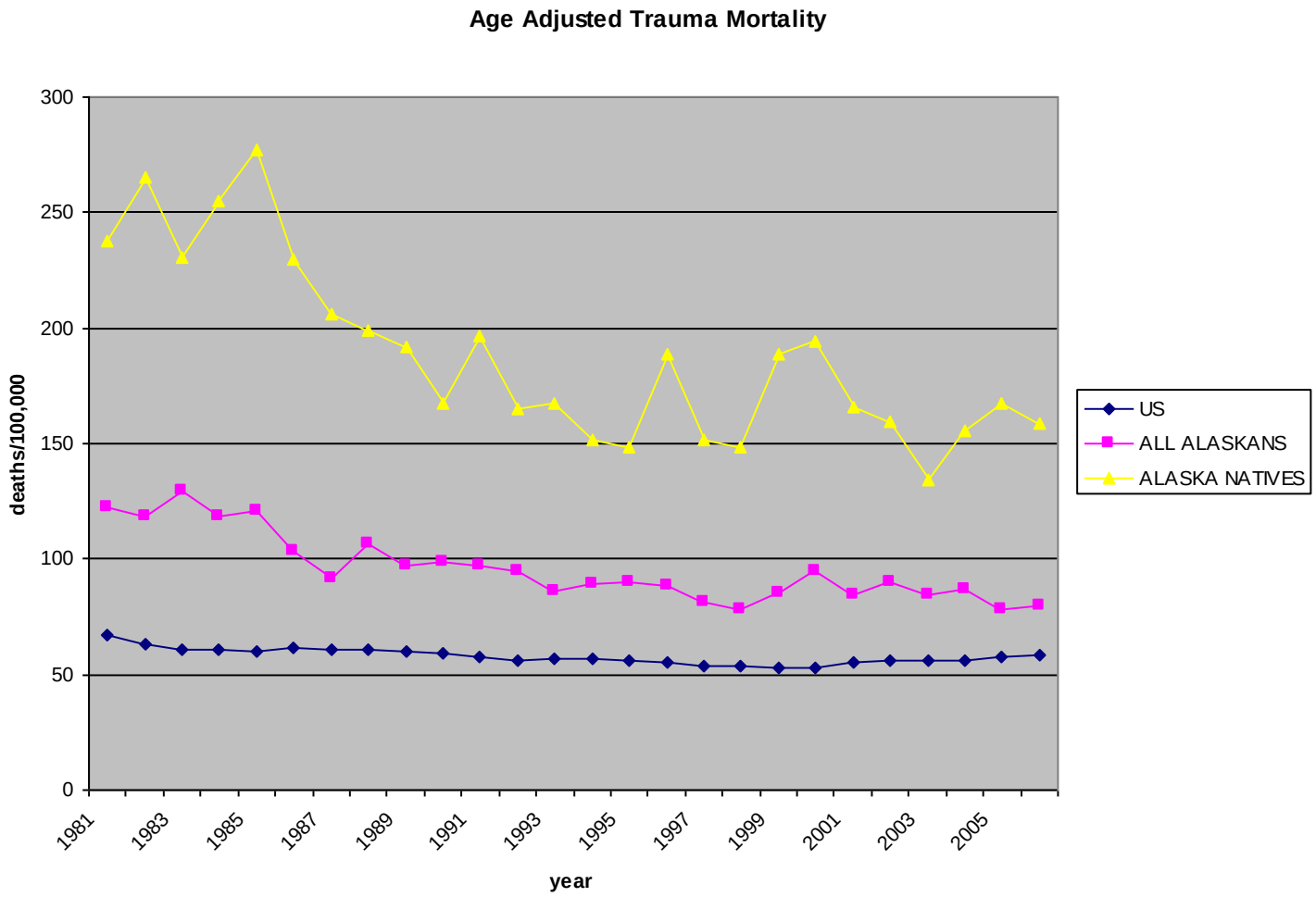
Rank	Age Groups										All Ages
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 15	Unintentional Injury 4	Unintentional Injury 3	Unintentional Injury 13	Unintentional Injury 47	Unintentional Injury 54	Unintentional Injury 55	Malignant Neoplasms 104	Malignant Neoplasms 163	Malignant Neoplasms 419	Malignant Neoplasms 732
2	Unintentional Injury 13	Congenital Anomalies 2	Malignant Neoplasms 2	Congenital Anomalies 1	Suicide 31	Suicide 23	Suicide 34	Heart Disease 71	Heart Disease 111	Heart Disease 405	Heart Disease 627
3	Maternal Pregnancy Comp. 7	Homicide 1	Congenital Anomalies 1	Heart Disease 1	Homicide 10	Homicide 10	Malignant Neoplasms 30	Unintentional Injury 56	Unintentional Injury 29	Cerebro-vascular 139	Unintentional Injury 313
4	Short Gestation 6			Homicide 1	Heart Disease 6	Malignant Neoplasms 7	Heart Disease 26	Suicide 26	Chronic Low. Respiratory Disease 26	Chronic Low. Respiratory Disease 117	Cerebro-vascular 178
5	Homicide 2			Malignant Neoplasms 1	Malignant Neoplasms 6	Heart Disease 6	Liver Disease 10	Liver Disease 16	Cerebro-vascular 19	Alzheimer's Disease 60	Chronic Low. Respiratory Disease 158
6	Necrotizing Enterocolitis 2			Meningitis 1	Cerebro-vascular 1	Diabetes Mellitus 2	Cerebro-vascular 7	Chronic Low. Respiratory Disease 14	Diabetes Mellitus 17	Diabetes Mellitus 57	Suicide 131
7	SIDS 2				Congenital Anomalies 1	Nephritis 2	Homicide 6	Diabetes Mellitus 14	Liver Disease 12	Unintentional Injury 39	Diabetes Mellitus 93
8	Six Tied 1				Diabetes Mellitus 1	Congenital Anomalies 1	Septicemia 4	Cerebro-vascular 12	Influenza & Pneumonia 11	Influenza & Pneumonia 30	Alzheimer's Disease 61
9	Six Tied 1				Pneumonitis 1		Three Tied 2	Three Tied 5	Suicide 9	Nephritis 28	Liver Disease 52
10	Six Tied 1						Three Tied 2	Three Tied 5	Septicemia 7	Parkinson's Disease 22	Influenza & Pneumonia 44

WISQARS™

Produced By: Office of Statistics and Programming, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention

Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System

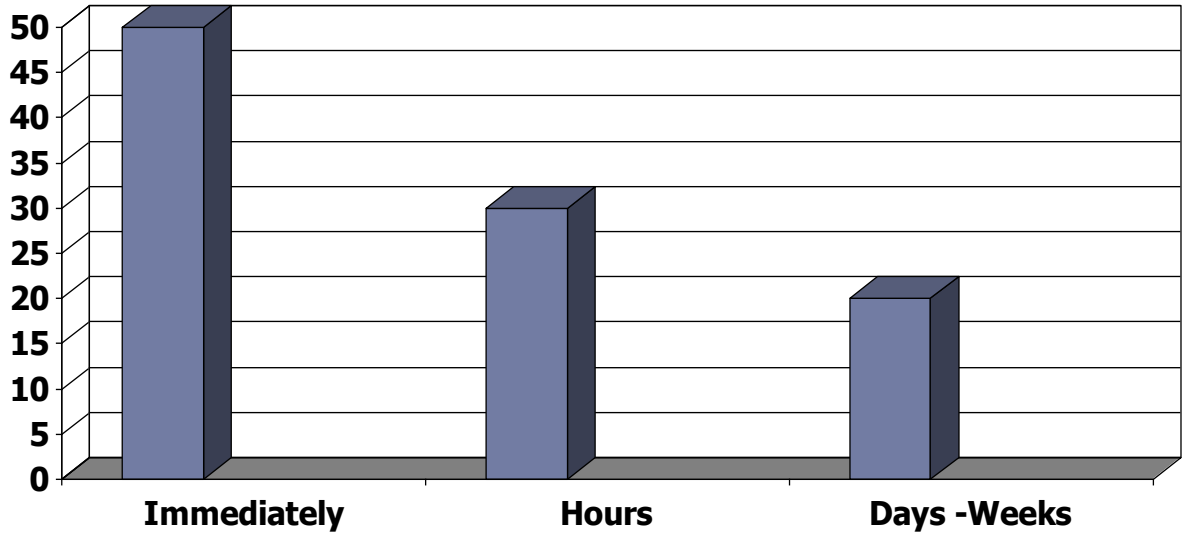
Trauma Mortality in Alaska



Trauma in Alaska

- Motor vehicle crashes leading cause of death.
- Firearm related injuries, second.
- 2009 hospital costs - Alaska trauma patients over $121 million.
- Medicaid & Workmans Comp 26 million hospital costs. (900 admissions)
- ~ 20% trauma admissions uncompensated.

Death from Trauma



Trauma Systems

- A trauma system consists of hospitals, personnel, and public service agencies with a preplanned response to caring for the injured patient.

Trauma Systems

"Getting the right patient to the right place in the right amount of time.'

- Facilities (trauma center designation)
- Personnel (training)
- Patient transport
- Triage

Trauma Systems

- "15-20% improvement in survival of the seriously injured." NEJM 1999
- Increase productive working years
- Improve statewide disaster preparedness.
- Inclusive systems -best

Trauma Systems
Facilities-Trauma Centers

- Level I -Definitive subspecialty care, research.
- Level II – Definitive subspecialty care, surgery, orthopedics, neurosurgery.
- Level III- General surgery, orthopedics, no neurosurgery
- Level IV- Stabilization, limited or no surgical capacity

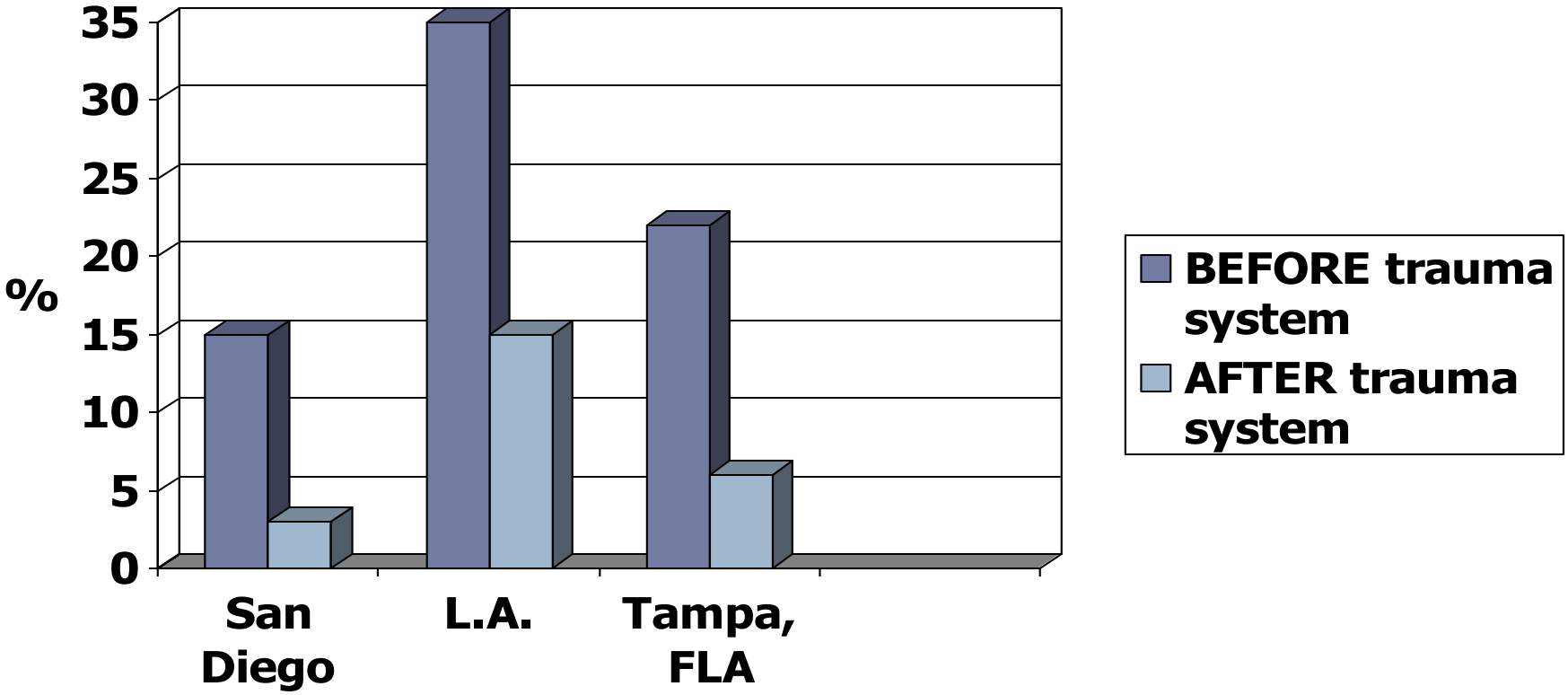
Trauma Systems- Training

- ATLS MDs, Midlevels
- TNCC Nurses
- RTTDC Rural MDs, Nurses, Prehospital
- PHTLS Prehospital
- ABLS Burn care
- ETT General public, Health aides

Trauma Systems- Transport

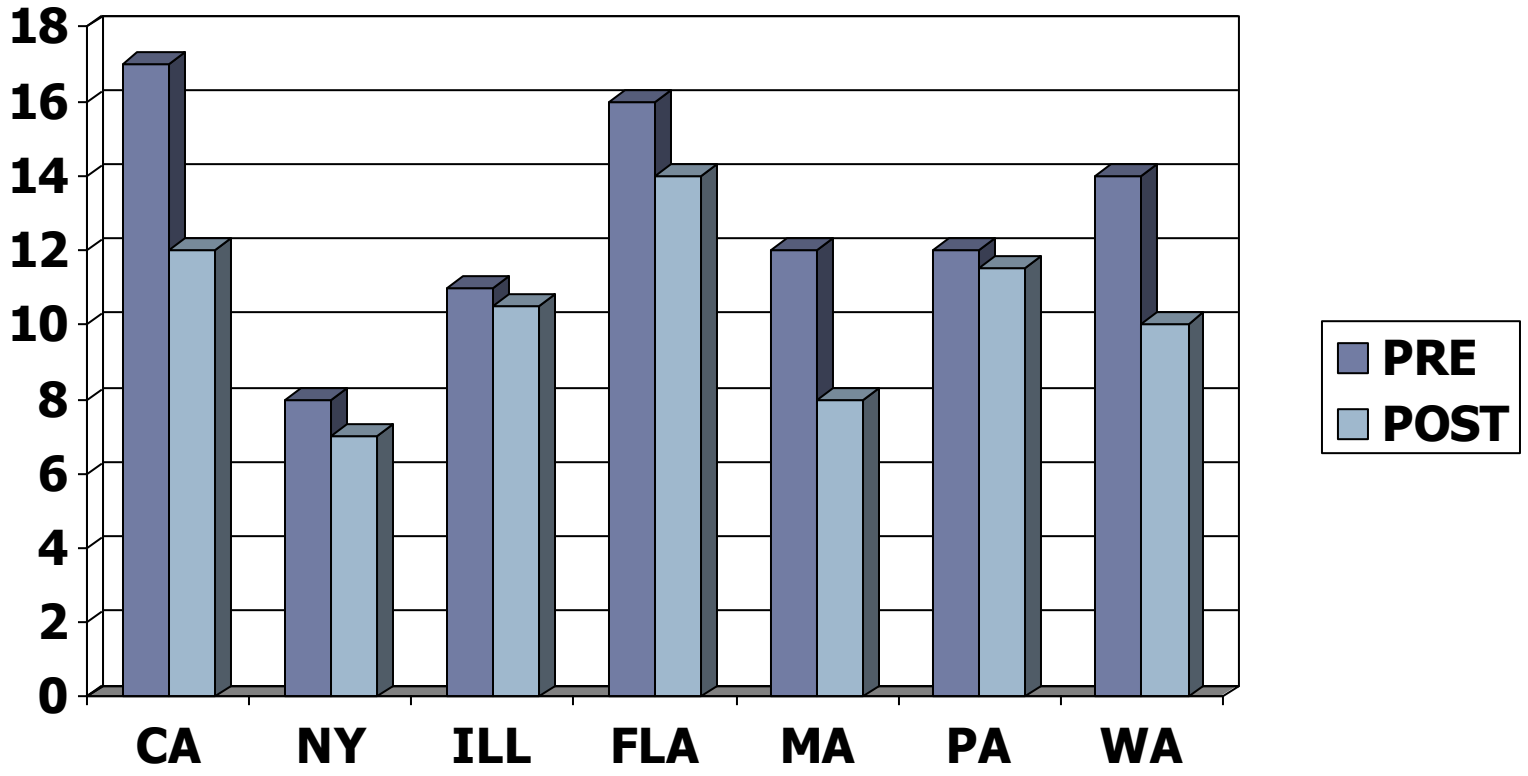
- EMS system
- Triage guidelines
- Injury protocols

Preventable Deaths: The impact of trauma systems



Trauma Systems & crash mortality

Nathens et.al. 2000



Trauma systems & crash mortality

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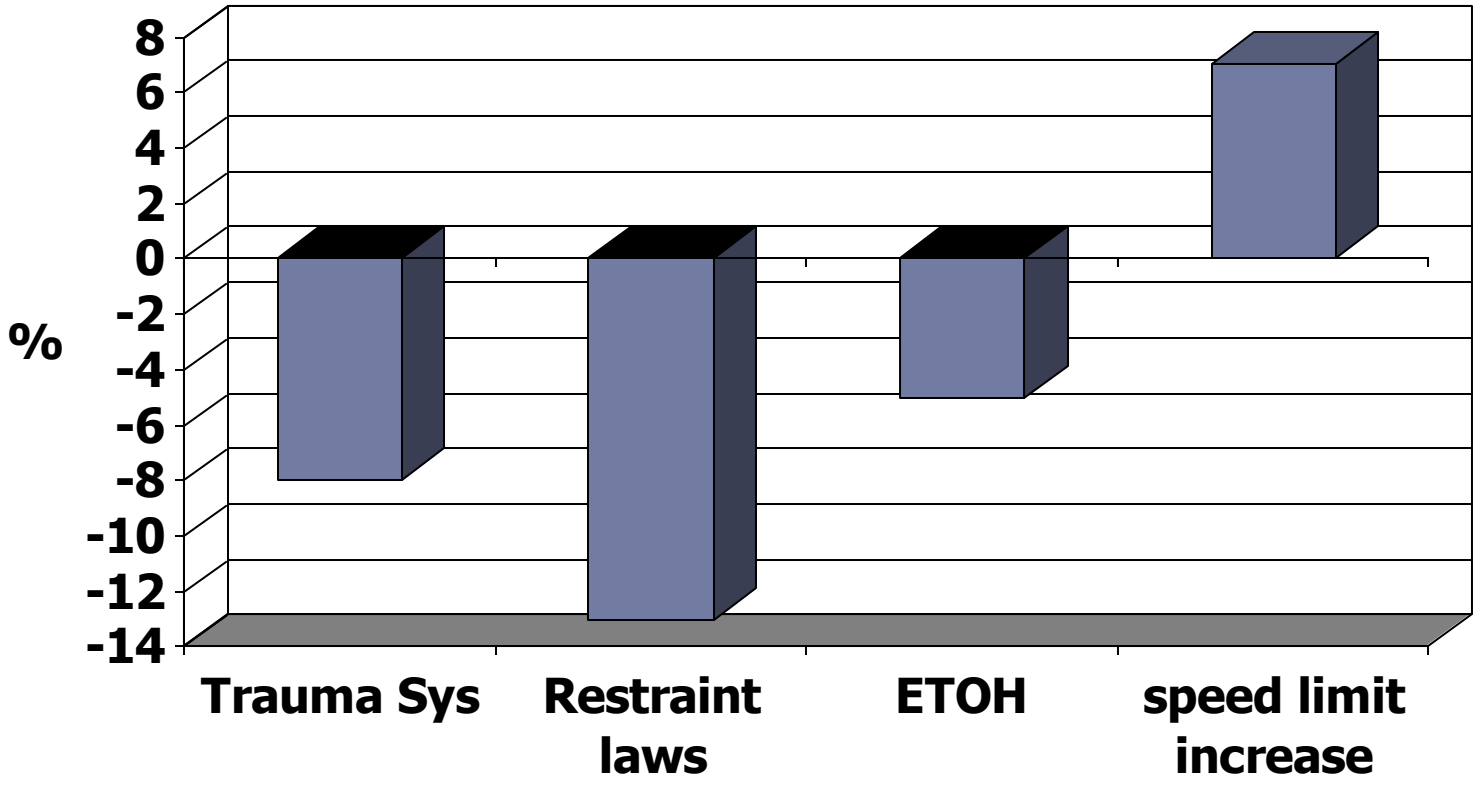
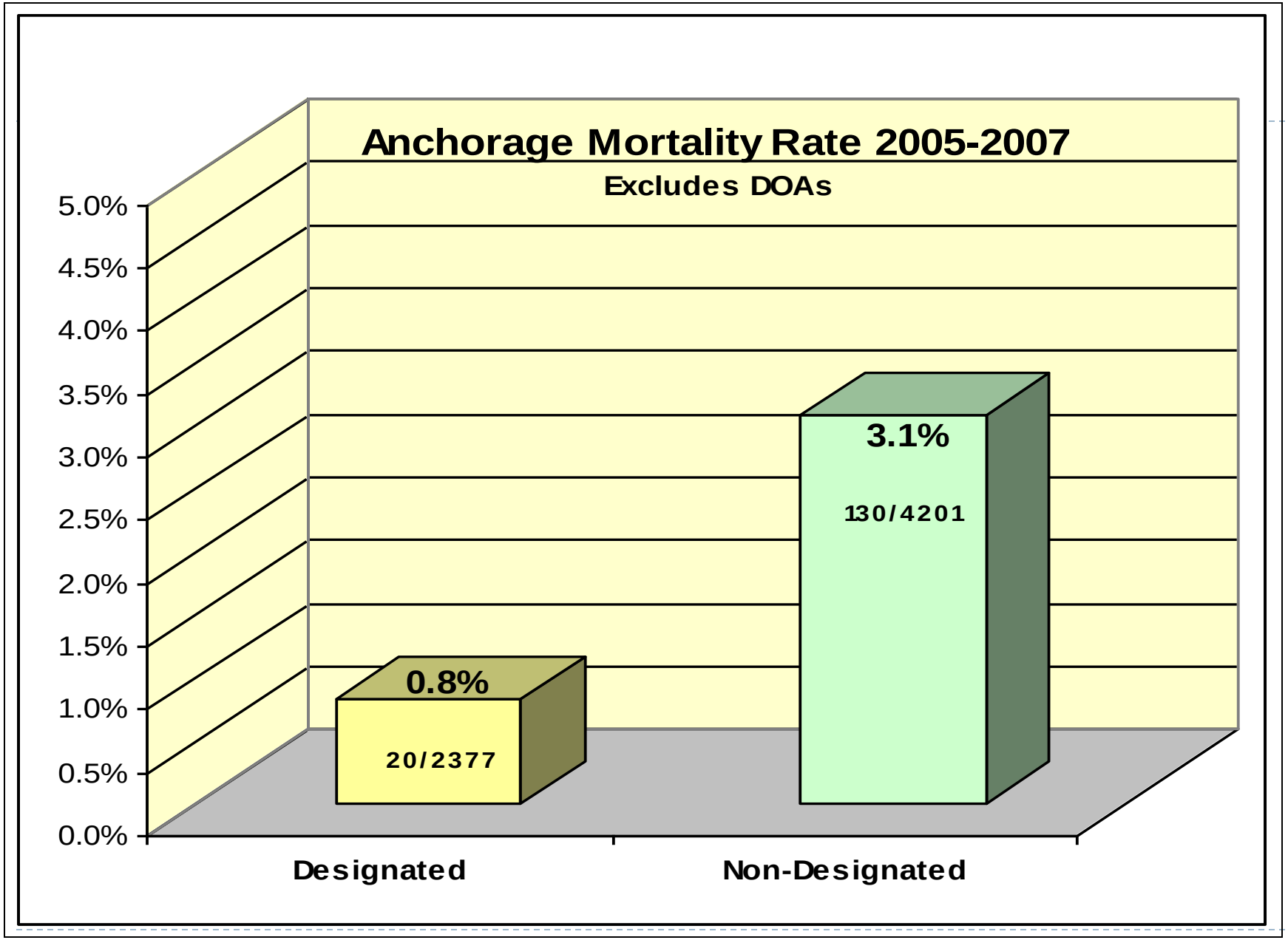
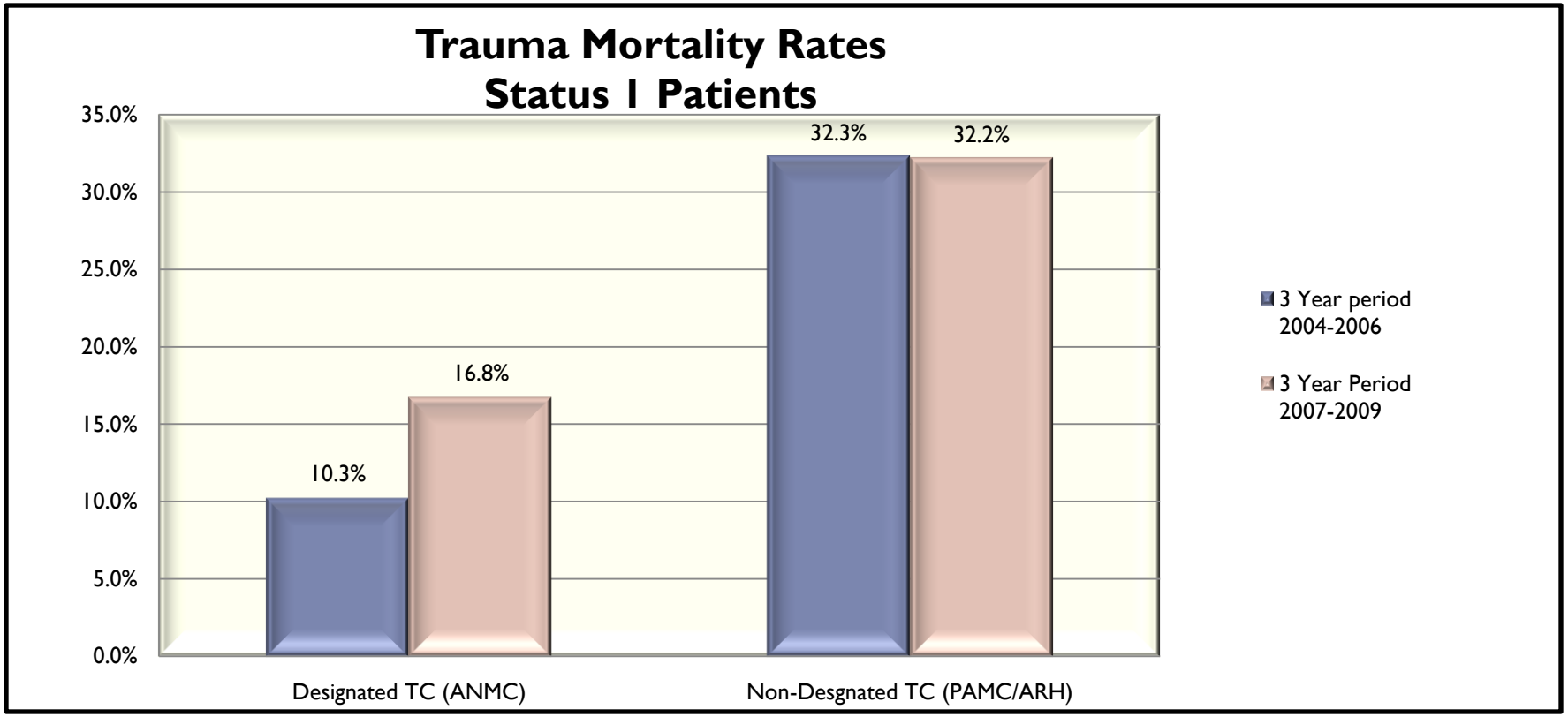




- Alaska Trauma Registry (p<.01)

Designated vs Nondesignated Facilities- Anchorage



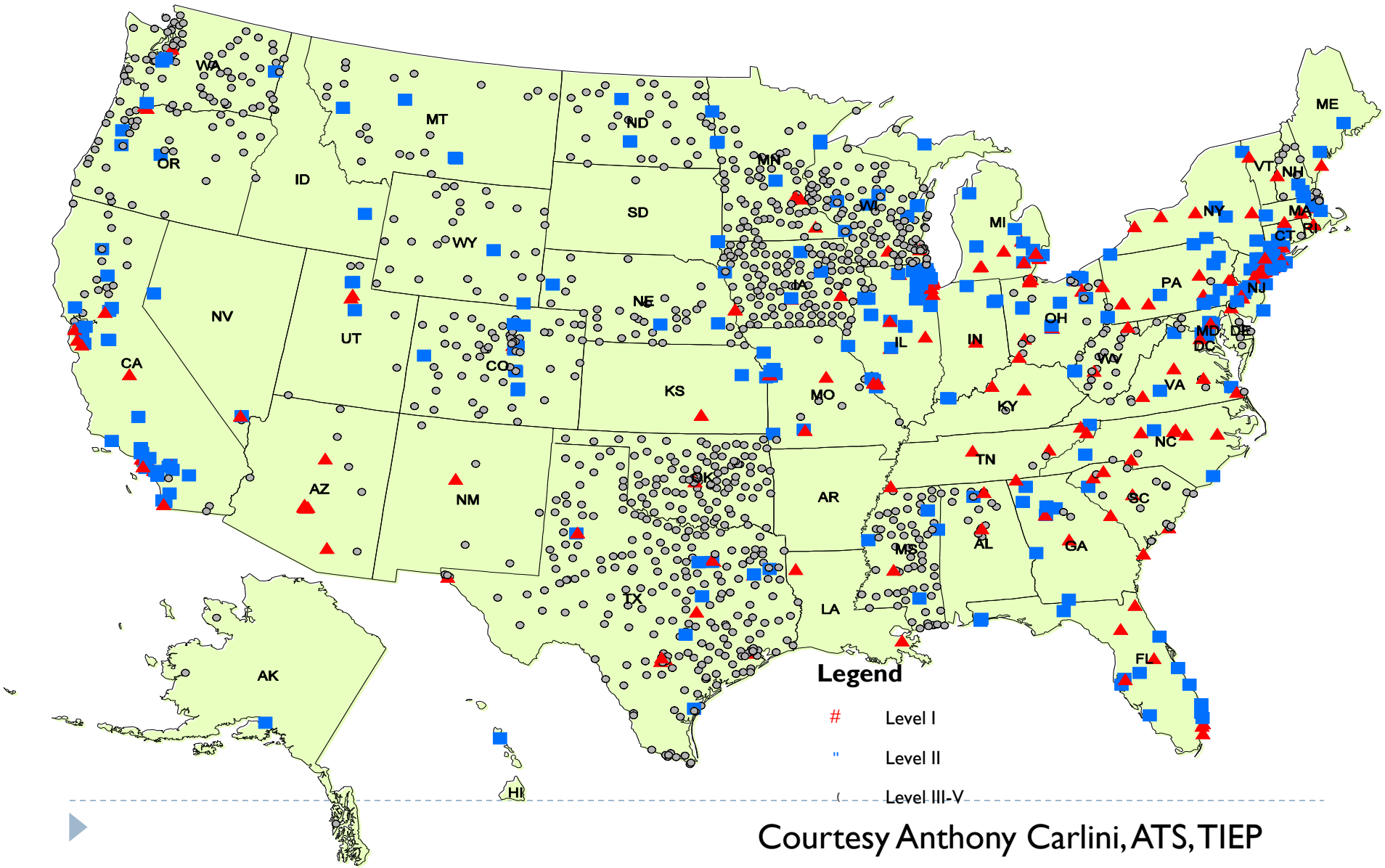
	Designated TC (ANMC)		Non-Desgnated TC (PAMC/ARH)		Designated TC (ANMC)	Non-Desgnated TC (PAMC/ARH)
	Deaths	Total Patients	Deaths	Total Patients		
3 Year period 2004-2006	16	156	86	266	10.3%	32.3%
3 Year Period 2007-2009	28	167	77	239	16.8%	32.2%

USA Trauma Center Growth Over Time

	1991	2002	2009
Level I	165	190	199
Level II	209	263	269
Level III	76	251	362
Level IV-V	21	450	748
Total	471	1,154	1,578
Pediatric Only			41

Courtesy Anthony Carlini ATS TIEP

Updated Trauma Center Status July 2009



Courtesy Anthony Carlini, ATS, TIEP

Alaska Trauma System- Beginnings

- 1993 statute- EMS authority for designating trauma centers created.
- Hospital participation voluntary.
- Standards for trauma center designation follow American College of Surgeons criteria.
- Outside review for Level I,II, and III

Current Status -18 Years Later

- **Twenty–four hospitals in Alaska**

Verified / Designated

- 1 Level II ANMC
- 4 Level IV centers- NSH -MEH - YKHC –SCH
- 9 other facilities with reviews or consultations.

Non-Verified

- 2 centers providing care for multiple trauma patients
- 6 centers that provide surgical capabilities
- 2 military hospitals

Alaska Trauma Facilities

- **Alaska -Only state without a designated Level I or II trauma center**

(that serves the majority of the population.)

- **Anchorage - the largest city in the US without a designated Level I or II center**
- (that serves the majority of the population.)

Insanity

"Insanity is doing the same thing in the same way and expecting a different outcome"

- Old Chinese Proverb

State of Alaska Dept of Health and Social Services: Trauma System Consultation November 2-5 2008

ACS-COT Site Visit Team

• Reginald A. Burton, MD FACS	Team Leader, Trauma Surgeon
• Jane Ball, RN, DrPH	ACS Consultant
• Samir M. Fakhry, MD FACS	Trauma Surgeon
• Holly Michaels	ACS Program Coordinator
• Drexdal Pratt, CEM	State EMS Director
• Nels Sanddal, PhDc, REMT-B	ACS Consultant
• James D. Upchurch, MD	Emergency Physician

Objective

- To help promote a sustainable effort in the graduated development of an inclusive trauma system for Alaska.
- Multidisciplinary review of the trauma system
- 17 states have been reviewed

Executive Summary

Advantages & Assets

- Committed individuals who use their expertise every day to serve Alaska citizens
- Extensive networks for transport
- 3 large medical centers with extensive subspecialty expertise within the state
- Large Level I trauma center in Seattle which freely accepts adult and pediatric trauma patients

Advantages & Assets

- One center maintains ACS Level II verification standards (others have obtained consultations and are working toward verification.)
- **Alaska Trauma Registry- all 24 acute care hospitals provide data.**
- Injury prevention activities are well established.
- Initial efforts at legislative change.

Challenges and Vulnerabilities

Public not aware of trauma system issues.

Limited human resources.

Few incentives for hospitals to participate.

No statewide evaluation of system performance.

Executive Summary

- "Several Alaska Native facilities have sought and achieved verification and designation as trauma centers. …… To date few of the facilities serving the majority population have made a similar commitment to achieving nationally recognized standards of trauma care."

ACS-COT Alaska Trauma Systems Review
11/2008

Recommendations: Definitive Care Facilities

- Establish, as soon as practical, a second Level II Trauma Center in Anchorage in accordance with ACS COT verification criteria to meet the existing volume and acuity demands.

- Mandate participation of all acute care hospitals in the trauma system within a 2 year time frame with trauma center designation **appropriate to their capabilities.**

Recommendations: Definitive Care Facilities

- Study pediatric trauma care needs and establish one or more in-state centers of excellence in pediatric trauma care.

- Determine a method of providing financial support for hospitals designated/certified by the state as trauma centers to assist with uncompensated care and the cost of readiness

Recommendations: System Coordination and Patient Flow

- Implement standardized prehospital triage and trauma activation protocols customized to the three response areas (Anchorage, Southeast, and the bush).

- Provide state funding to hire a fulltime trauma system manager.

ACS Recommendations- State Actions

- DHSS has created and filled the trauma manager position who is facilitating development of a statewide trauma plan.
- Trauma Systems Review Committee working to develop metrics to measure trauma system performance.
- Legislation to create incentives for facilities to participate was passed in 2010.

Alaska Trauma Systems Review Committee

- MDs, nurses, administrative, prehospital, and public representation

- Meets twice a year

Oversight - Trauma Registry
- Level IV Trauma verification
- EMS triage and interfacility transfer guidelines
-Trauma system performance improvement.

LEGISLATION-House & Senate Bills 168, 169

- Introduced - Rep John Coghill(R) and
  Sen Bettye Davis(D) March 2009
- Passed unanimously April 2010
- Signed Governor Parnell June 2010.

Created trauma fund to support trauma care given at designated trauma centers.

Completely Voluntary

Trauma Fund

- Encourages facilities to become designated trauma centers by providing financial incentive and helps offset the costs of training, personnel and equipment.
- Money only for facilities that have been designated by the state.
- Since passage 17/19 undesignated facilities have sought applications or consultations.

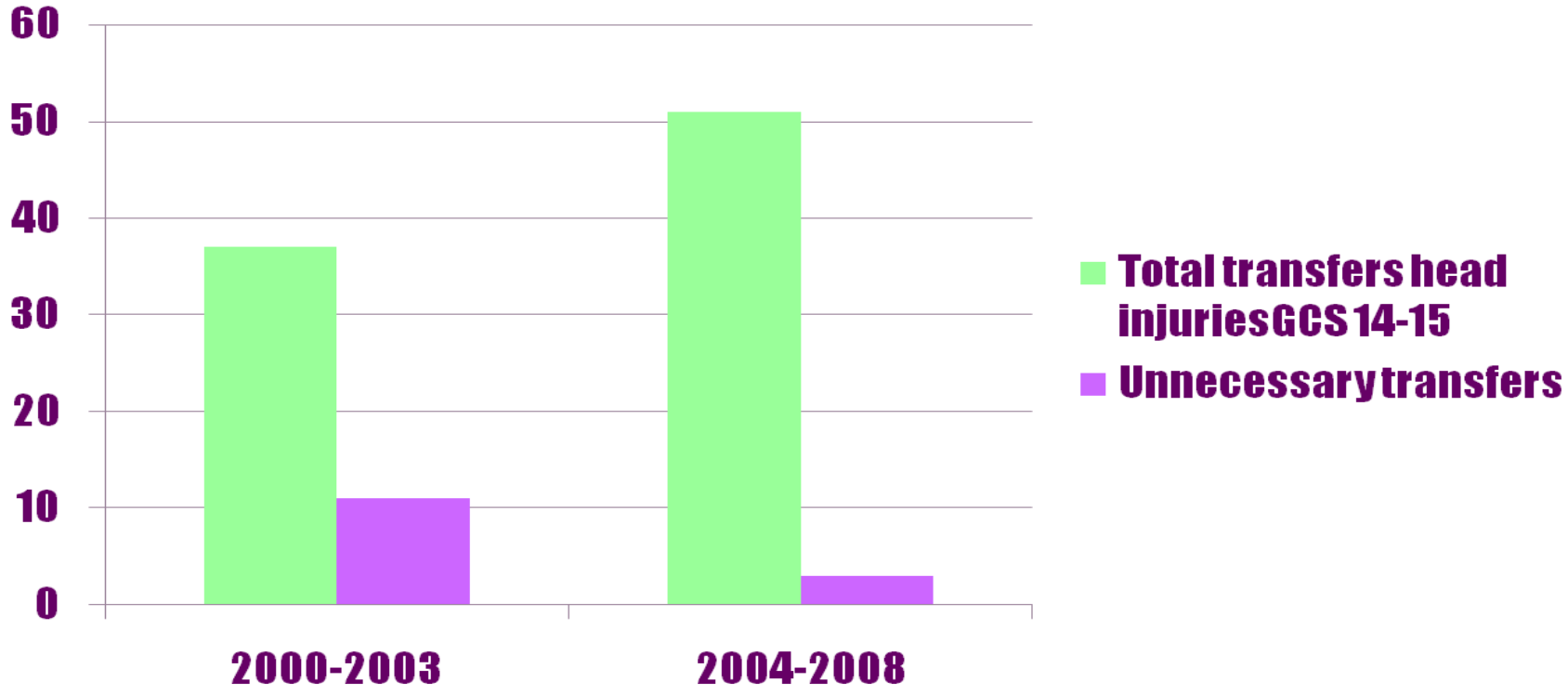
Alaska Head Injury Guidelines-2004

- Patients with minor head injuries are often evaluated at rural and remote facilities without CT scanners.
- Very few <1% will require neurosurgery.
- Guidelines were developed and validated to recommend which patients could be safely observed.

Implementation- Guidelines

Ad Hoc committee of TSRC- Private and tribal MDs including neurosurgery, emergency, surgical and pediatric specialists.	2003
ATLS courses	2003
Mailings to ER directors	2003
EMS symposium	11/2003
Published "Alaska Medicine"	8/2004

Outcome after Implementation at tribal facilities.



Outcomes

- No inappropriately transferred patients required surgery
- No patients observed required transfer and surgery
- Prevented 12 unnecessary medevacs
- ~$300,000 dollars savings

University of New Mexico Teleradiology

- Many patients are transferred because of abnormal head CT after minor trauma.
- Very few of those patients need neurosurgery
  < 5%.

High quality digital studies are easily transferred by telemedicine.

Having the CT scan reviewed by neurosurgeon allowed 42% of patients with abnormal scan to be observed locally

Trauma Center Designation

- **Impact of American College of Surgeons verification on trauma outcomes.** Piontek FA, Coscia R, Marselle CS, Korn RL, Zarling EJ; American College of Surgeons. J Trauma. 2003 Jun;54(6):1041-6

- Decreased LOS
- Decreased in hospital mortality
- Decreased costs 5%

Looked at the impact of Level II designation on a large community hospital in Idaho.

Public Awareness-

Harris Poll 2004

- After hearing a description of a trauma center, almost all Americans feel it is extremely or very important to be treated at a trauma center in the event of a life-threatening injury.

Harris Poll

- Almost 9 out of 10 of Americans feel that having a trauma center nearby is as important as or more important than having a Fire Department or Police Department.

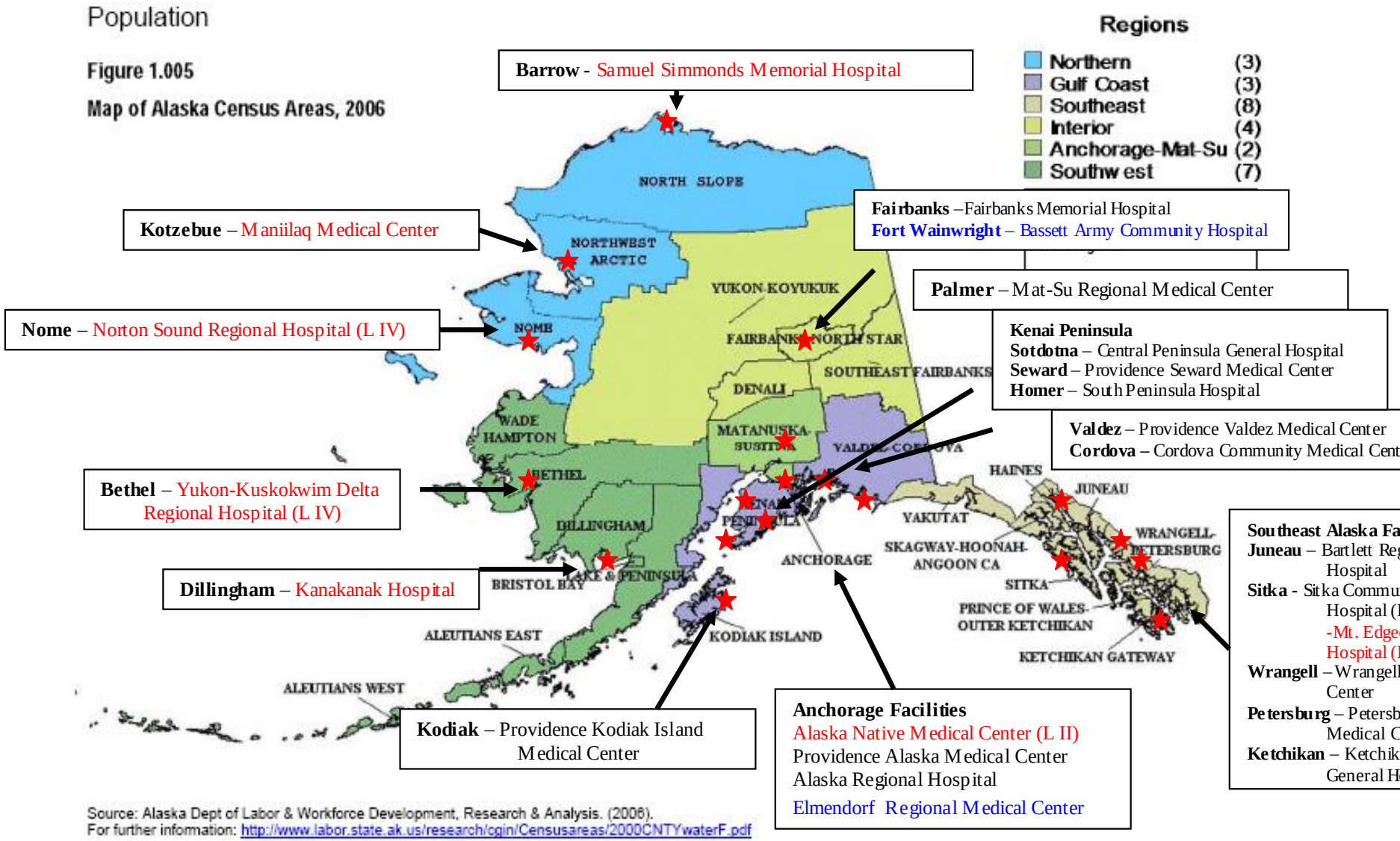
Harris Survey- Conclusions

- The majority of the public thinks it is important to have a trauma system. (nonpartisan issue.)
- Most people think they have it already.
- Many who think they are covered by a regional system are not.

Vision

- An integrated system that addresses trauma from injury prevention through acute care and rehabilitation.

Acute Care Facilities in Alaska



The Future: Alaska Trauma System(s)

Trauma Systems as Paradigm for Emergency or Acute Care System

- Readiness and training
- Preplanning
- Best practices
- Performance review
- Communication

Trauma Systems as Paradigm

- Acute time dependant conditions
  - Cardiac- STEMI programs
  - Stroke
  - GI bleeding
  - Obstetrical emergencies

Disaster Preparedness

Barriers to Trauma System Development

Hospital Administration concerns

-Extra cost especially at Level IIs

-Lack of physician support.

-Lack of demand from the community.

Provider Concerns

- Not needed " we do fine"
- No financial incentive.
- More rules and regulations.

Stability and health of Prehospital System

Conclusions

- Trauma is a major health burden for alaskans and state government.
- Trauma systems save lives and money
- Alaska has made limited progress in developing an inclusive statewide system.
- The creation of the trauma fund seems to be having the desired effect

Action Items for 2011-12

1. Trauma Fund will need to be replenished.
   1.1 million paid out to date.
   If all hospitals designated ~ 5 million/yr.

2. Trauma Registry support -$80,000/year.

3. Prehospital system- ??? cost
   - diverse, large volunteer component.
   -essential to the functioning of an inclusive trauma system.

4. Prevention and Rehabilitation integration of these programs with the acute care and prehospital programs.

Trauma

- Ultimately as a state we will take care of injured patients.
- The question today is not if we will take care of injured alaskans, it is how are we going to do it?

Why is this important?

Because it makes a difference and it is the care we all want for our family and neighbors if they are seriously injured.